



US005352926A

United States Patent [19]

Andrews

[11] Patent Number: **5,352,926**[45] Date of Patent: **Oct. 4, 1994****[54] FLIP CHIP PACKAGE AND METHOD OF MAKING**

[75] Inventor: James A. Andrews, Phoenix, Ariz.

[73] Assignee: Motorola, Inc., Schaumburg, Ill.

[21] Appl. No.: 80

[22] Filed: Jan. 4, 1993

[51] Int. Cl.⁵ H01L 23/48[52] U.S. Cl. 257/717; 257/737;
257/778; 437/209; 437/215[58] Field of Search 257/737, 747, 720, 778,
257/717, 778, 734; 437/195, 209, 215**[56] References Cited****U.S. PATENT DOCUMENTS**

3,471,753 10/1969 Burks et al. 257/778
3,871,015 3/1975 Lin et al. 257/778
5,077,598 12/1991 Bartelink 357/68
5,250,847 10/1993 Baskett 257/778

FOREIGN PATENT DOCUMENTS

56-94781 7/1981 Japan .

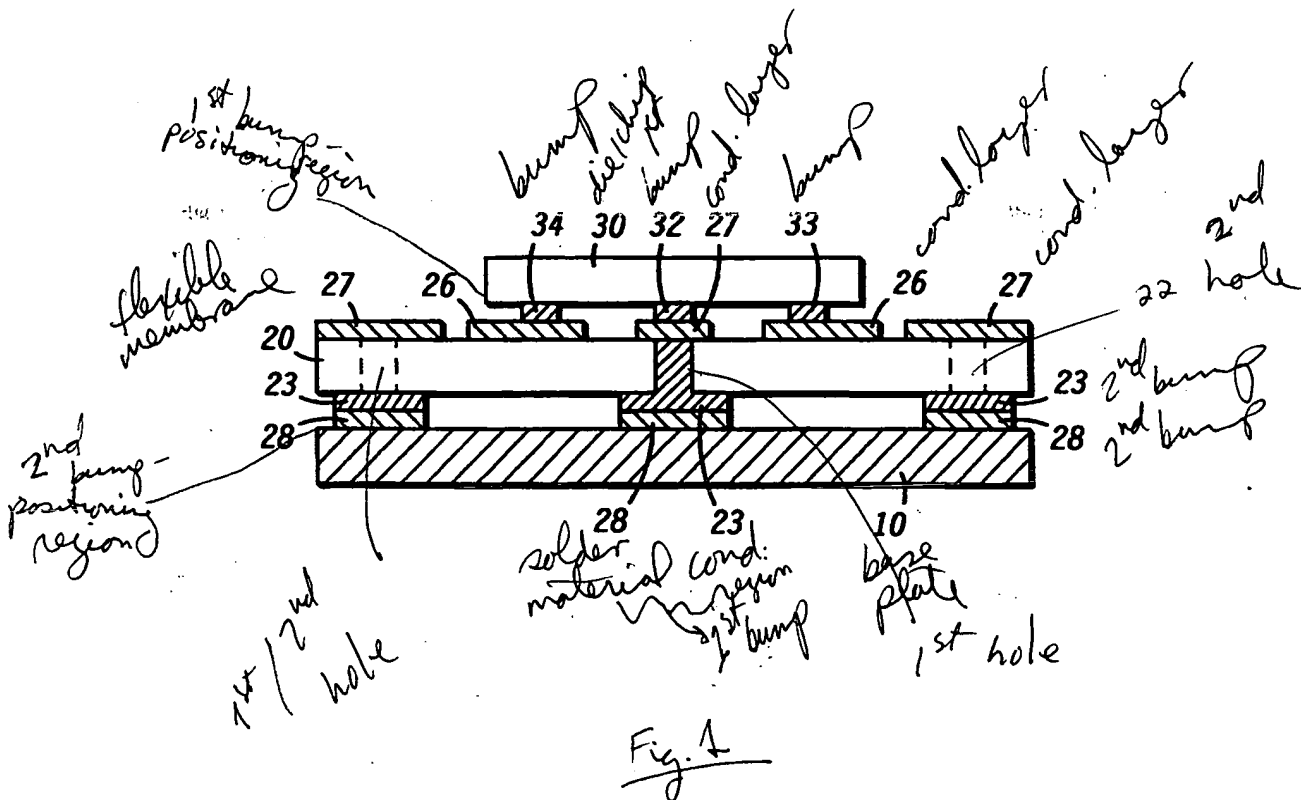
Primary Examiner—William Mintel

Assistant Examiner—Roy Potter

Attorney, Agent, or Firm—Miriam Jackson

[57] ABSTRACT

A portion of a semiconductor die is rigidly flip chip bonded to a conductive base plate and portion is bonded to a flexible dielectric material to take advantage of the benefits of flip chip packaging while at the same time allowing for heat to be dissipated and for differential thermal expansion to be relieved. A semiconductor die having at least a first and a second bump formed thereon is rigidly connected to the base plate through the first bump and is flexibly connected to the base plate through the second bump.

19 Claims, 2 Drawing Sheets

10/707,609

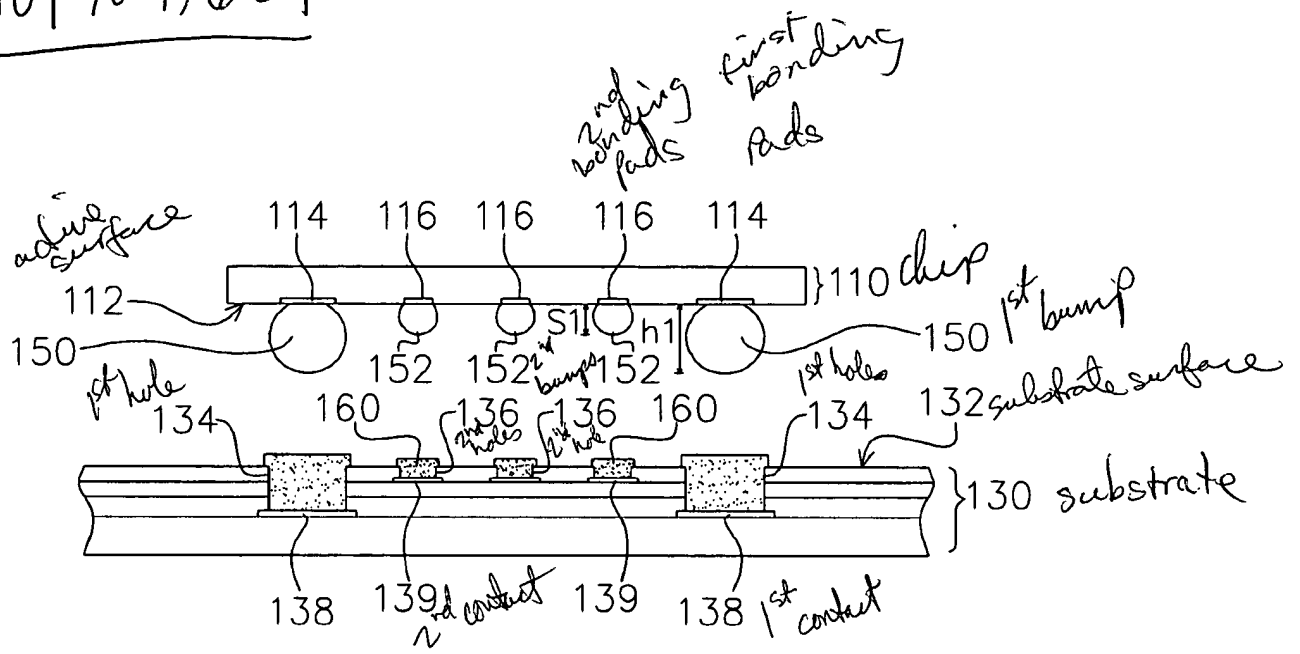


FIG. 1

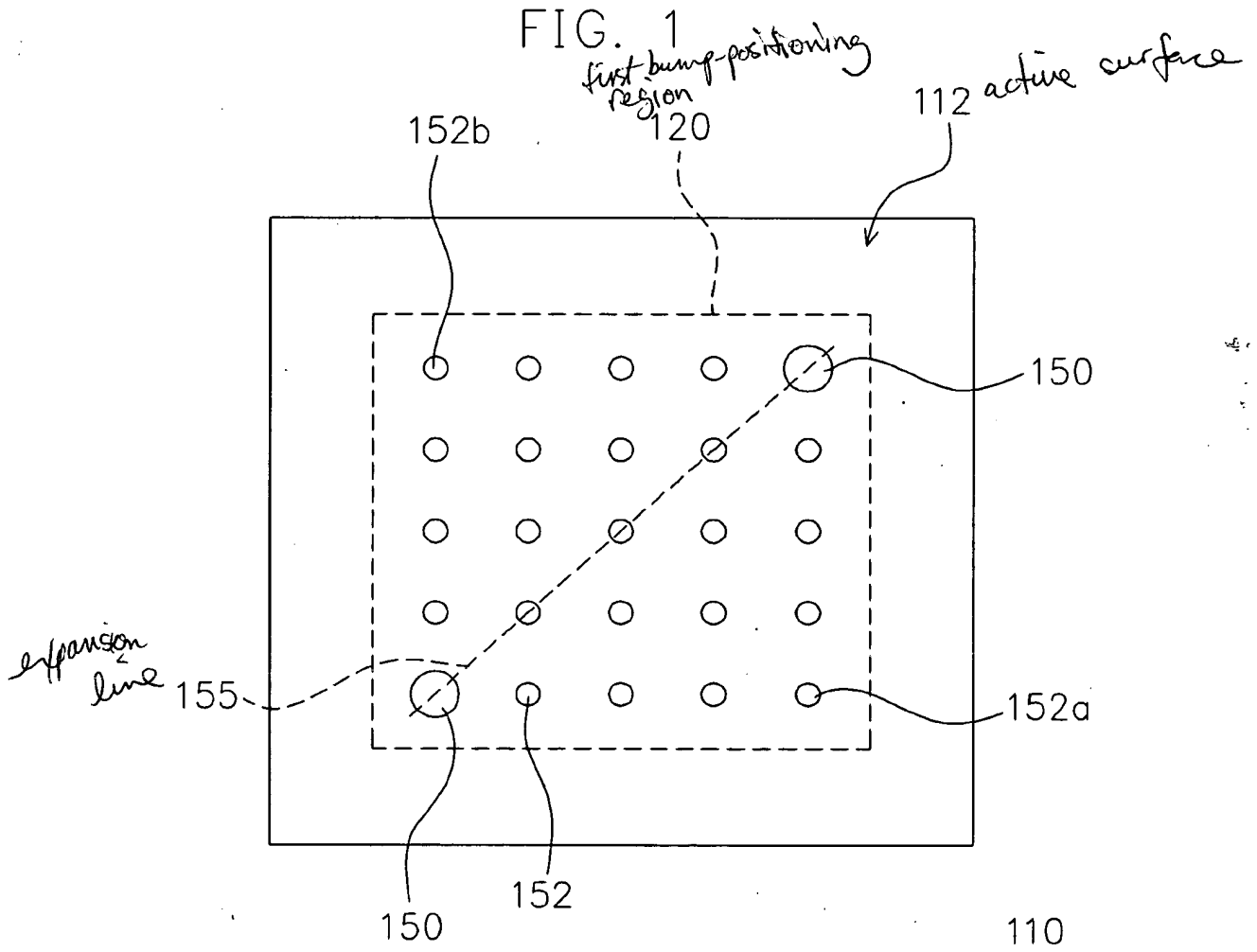


FIG. 1A

10/707609

